

Field Crops

Growing Season Weather Summary

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Weatherwise, the 2001 growing season was characterized by extremes of water availability, initially as too much and later in the season, by too little. Drought and moisture stress plagued crops in much of the Great Lakes region to some extent, especially during the months of July and August. The drought conditions were very ill-timed in an agricultural sense because they coincided with stages of greatest water needs for many crops. From late April through early June, much of the region experienced persistent heavy rain and ironically, some flooding. For example, more than 10 inches of rain fell in the Grand Rapids area during May alone, a new record total for the month. The early wetness in these areas delayed planting of summer crops and resulted in shallower than normal rooting systems for crops already established.

A major change in the configuration of the jet stream across North America in mid-June led to a much drier weather pattern which persisted from late June through mid-August. Given normal monthly precipitation totals in the State ranging from 2.8 to 3.6 inches, the rainfall deficit at Lansing by mid-August was likely at least 3 inches. Dryness and moisture stress conditions were most intense in northern and eastern sections of the State, with less than 25 percent of normal precipitation totals in many sections of the northern and eastern Lower Peninsula during July and early August. In some of the Thumb and Saginaw Valley regions no rain fell from late June through early August. NOAA's Palmer drought index, which characterizes long term, hydrological surpluses and deficits, categorized conditions in this area during much of late July and August as 'moderate to severe drought'. In many of the worst impacted areas, precipitation deficits of 3 to 6 inches or more were common by mid-August. In a meteorological sense, the drought

was associated with a large, persistent upper air ridge across the Upper Midwest and warm, dry air aloft, which effectively inhibited convection across the State. This is the reason a series of rainfall-bearing weather disturbances moving into Michigan from the west rapidly dissipated as they moved into the State, with only sprinkles or light rainfall totals. The abnormal dryness in Michigan was part of a regional pattern, stretching from Michigan eastward through southern Ontario, sections of Ohio, Pennsylvania, New York and into New England.

In terms of timing, the drought impacted many summer crops during moisture-sensitive growth stages and/or stages of greatest water need (including silk/pollination for corn), leading to moisture stress which peaked in the first half of August. Reported crop damage was highly variable from area to area, with some spots benefitting from very timely rains and/or from soil profiles with greater stored water availability. Plant available moisture from the top 6 feet of the soil profile at field capacity typically ranges from 3 to 8 inches for soils in the region.

A return to an upper air ridging pattern across the Midwest during late September and much of October brought warmer, drier weather, which when combined with a later than normal first killing freeze of the fall allowed many crops slowed by earlier cool temperatures to reach maturity. Overall, for the 5-month May to September period, mean temperatures and growing degree day accumulations ranged from near to below normal statewide. Precipitation was highly variable, ranging from below normal totals in northern sections of the State to much above normal levels in the south.

Field crops: Acres harvested and value of production, 1997-2001

| Item | Unit | 1997 | 1998 | 1999 | 2000 | 2001 |
|---------------------|---------------|-----------|-----------|-----------|-----------|-----------|
| Acres harvested | 1,000 acres | 6,740 | 6,653 | 6,730 | 6,593 | 6,435 |
| Value of production | 1,000 dollars | 1,892,458 | 1,503,206 | 1,569,098 | 1,428,981 | 1,244,058 |

Grain storage capacity, December 1, 1997-2001

| Year | Off farm | | On farm capacity |
|------|---------------|------------------------|------------------|
| | Facilities | Rated capacity | |
| | <i>Number</i> | <i>Million bushels</i> | |
| 1997 | 289 | 146 | 250 |
| 1998 | 286 | 143 | 270 |
| 1999 | 270 | 141 | 280 |
| 2000 | 250 | 141 | 280 |
| 2001 | 245 | 146 | 280 |

Field crops: Record highs and lows

| Crop | Unit | Record high | | Record low | | Year estimates started |
|-------------------------|-------------|-------------|----------------|------------|-----------|------------------------|
| | | Quantity | Year | Quantity | Year | |
| Barley | | | | | | |
| Harvested acres | 1,000 acres | 303 | 1932 | 16 | 1974 | 1866 |
| Yield per acre | Bushels | 68.0 | 1985 | 13.5 | 1933 | |
| Production | 1,000 bu | 8,400 | 1918 | 546 | 1866 | |
| Dry Edible beans | | | | | | |
| Harvested acres | 1,000 acres | 690 | 1930 | 130 | 2001 | 1909 |
| Yield per acre | Pounds | 2,100 | 1999 | 320 | 1917 | |
| Production | 1,000 cwt | 8,585 | 1963 | 780 | 2001 | |
| Corn for grain | | | | | | |
| Harvested acres | 1,000 acres | 2,800 | 1981 | 480 | 1866 | 1866 |
| Yield per acre | Bushels | 130.0 | 1999 | 21.5 | 1917 | |
| Production | 1,000 bu | 293,180 | 1982 | 15,120 | 1869 | |
| Corn for silage | | | | | | |
| Harvested acres | 1,000 acres | 498 | 1971 | 211 | 1942 | 1924 |
| Yield per acre | Tons | 17.5 | 1999 | 4.7 | 1930 | |
| Production | 1,000 tons | 5,565 | 1977 | 1,542 | 1930 | |
| Hay, alfalfa | | | | | | |
| Harvested acres | 1,000 acres | 1,444 | 1950 | 74 | 1919 | 1919 |
| Yield per acre | Tons | 4.2 | 1993 | 1.1 | 1934 | |
| Production | 1,000 tons | 5,040 | 1985,1986 | 118 | 1919 | |
| Hay, all | | | | | | |
| Harvested acres | 1,000 acres | 2,947 | 1924 | 780 | 1866 | 1866 |
| Yield per acre | Tons | 3.8 | 1993 | 0.6 | 1895 | |
| Production | 1,000 tons | 5,743 | 1986 | 1,014 | 1866 | |
| Oats | | | | | | |
| Harvested acres | 1,000 acres | 1,658 | 1918 | 55 | 2001 | 1866 |
| Yield per acre | Bushels | 67.0 | 1985,1989 | 18.5 | 1921 | |
| Production | 1,000 bu | 69,388 | 1946 | 3,520 | 2001 | |
| Potatoes | | | | | | |
| Harvested acres | 1,000 acres | 374.0 | 1895 | 36.4 | 1975 | 1866 |
| Yield per acre | Cwt | 315.0 | 1998,1999,2000 | 26.0 | 1887,1916 | |
| Production | 1,000 cwt | 23,256 | 1904 | 3,557 | 1876 | |
| Soybeans | | | | | | |
| Harvested acres | 1,000 acres | 2,130 | 2001 | 1 | 1930 | 1924 |
| Yield per acre | Bushels | 40.0 | 1995,1999 | 8.0 | 1927 | |
| Production | 1,000 bu | 77,600 | 1999 | 10 | 1930 | |
| Spearmint | | | | | | |
| Harvested acres | 1,000 acres | 8.7 | 1954 | 0.7 | 1935 | 1935 |
| Yield per acre | Pounds | 50.0 | 2001 | 20.0 | 1965 | |
| Production | 1,000 lbs | 280 | 1948 | 27 | 1996 | |
| Sugarbeets | | | | | | |
| Harvested acres | 1,000 acres | 190 | 1999 | 48 | 1943,1953 | 1909 |
| Yield per acre | Tons | 21.3 | 1970 | 5.5 | 1916 | |
| Production | 1,000 tons | 3,534 | 1999 | 298 | 1943 | |
| Wheat, winter | | | | | | |
| Harvested acres | 1,000 acres | 1,515 | 1953 | 400 | 1987 | 1909 |
| Yield per acre | Bushels | 72.0 | 2000 | 10.5 | 1912 | |
| Production | 1,000 bu | 45,600 | 1984 | 7,350 | 1912 | |

Barley

Michigan barley growers planted 21,000 acres and harvested 18,000 acres in 2001. This represented a 5 percent decrease in the number of acres planted and harvested. Total production was 1.01 million bushels, down 12 percent from 2000. The average yield decreased 4 bushels to 56 bushels per acre. Barley planting was

completed by early June. Rainfall through mid-June was above normal and the crop responded well. Hot, dry weather in August was favorable for harvest. Menominee, Delta, Sanilac, and Huron counties were the top four barley producing counties in the State.

Barley: Acres, yield, production, and value, 1997-2001

| Year | Planted | Harvested | Yield | Production | Price ¹ | Value of production |
|------|--------------------|--------------------|----------------|----------------------|--------------------|----------------------|
| | <i>1,000 acres</i> | <i>1,000 acres</i> | <i>Bushels</i> | <i>1,000 bushels</i> | <i>Dollars</i> | <i>1,000 dollars</i> |
| 1997 | 25 | 22 | 58 | 1,276 | 1.90 | 2,424 |
| 1998 | 27 | 23 | 50 | 1,150 | 1.50 | 1,725 |
| 1999 | 23 | 21 | 66 | 1,386 | 1.70 | 2,356 |
| 2000 | 20 | 19 | 60 | 1,140 | 1.10 | 1,254 |
| 2001 | 21 | 18 | 56 | 1,008 | 1.50 | 1,500 |

¹ Marketing year average.

Corn

Michigan had 2.2 million acres planted to corn in 2001, the same as in 2000. Grain corn production was 199.5 million bushels, down 18 percent from 2000; 1.90 million acres were harvested for grain. The yield of 105 bushels per acre was down 19 bushels from the 2000 crop. Michigan ranked eleventh among states in corn for grain production. Farmers harvested 280,000 acres of corn for silage with an average yield of 13.0 tons per acre.

Planting of corn in Michigan began in earnest the last week of April. Extremely heavy rains slowed progress the second week of May and necessitated substantial replanting. Nevertheless, progress was ahead of average throughout May, and planting was completed on schedule by mid-June. The majority of the emerged planted acres was yellowed from cool soil temperatures and wet conditions. Post-emergence herbicides had to be applied to compensate for pre-emergence herbicides that had been washed out of the soils.

Michigan's corn for grain potential was slashed by July moisture shortages. Curling leaves were a common sight when much of the crop was in the crucial pollination stage.

Above normal temperatures and insignificant precipitation

continued until mid-August. August rains came after most pollination and ear formation had occurred. Plant growth was below normal, ears were short, and, in many cases, not filled.

Combining of Michigan's corn drought-decimated crop began on schedule the last week of September. Plant development was at the normal level, but only one-fifth of the crop was rated in good to excellent condition. Harvest was about 40 percent done by November 1, near the normal pace. Combining was slowed in late October by heavy rainfall, which caused lodging in some areas. The harvest weather improved in November, and 90 percent of the crop was combined by the end of the month, meeting the normal schedule. Abandonment was above normal, and substantial acreage intended for grain was harvested for silage.

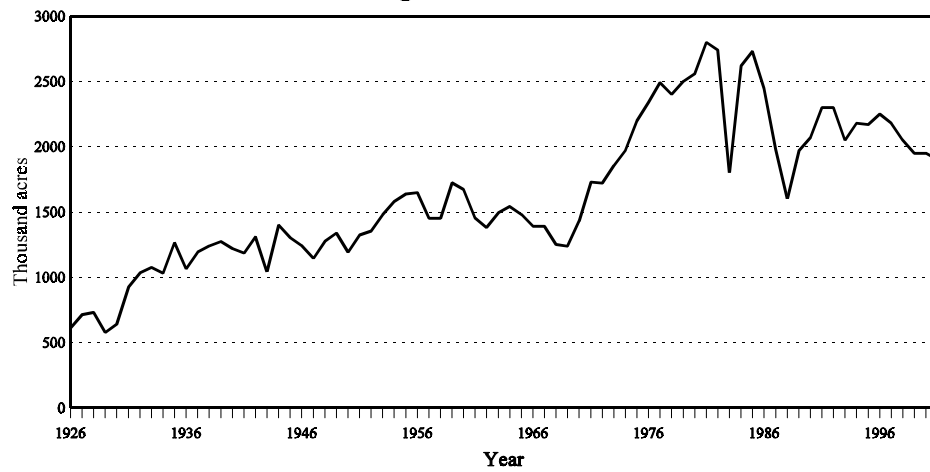
The 2001 corn crop was valued at \$379 million, down 18 percent from 2000. Corn continued to be Michigan's number one crop in value of production. The top five counties in corn production in 2001 were Lenawee, St. Joseph, Branch, Allegan, and Gratiot.

Corn: Acres, yield, production, and value, 1997-2001

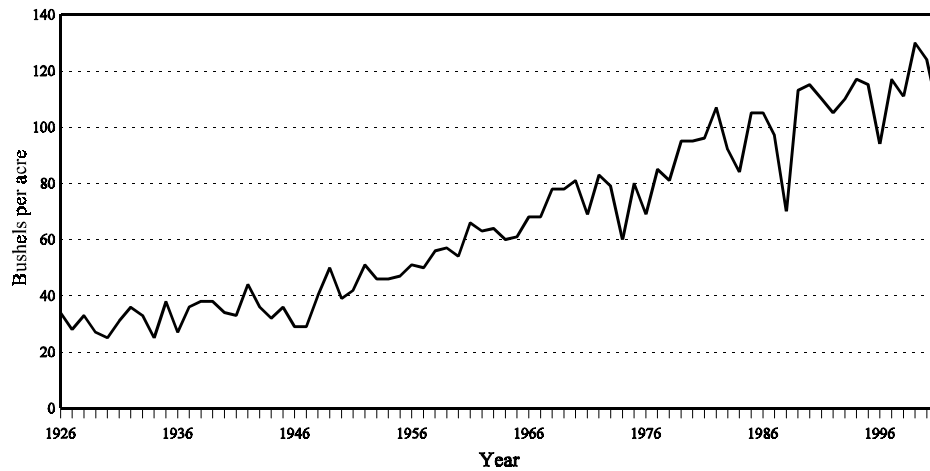
| Year | Planted | Harvested | Yield | Production | Price ¹ | Value of production |
|--------|--------------------|--------------------|----------------|----------------------|--------------------|----------------------|
| | <i>1,000 acres</i> | <i>1,000 acres</i> | <i>Bushels</i> | <i>1,000 bushels</i> | <i>Dollars</i> | <i>1,000 dollars</i> |
| All | | | | | | |
| 1997 | 2,500 | | | | | |
| 1998 | 2,300 | | | | | |
| 1999 | 2,200 | | | | | |
| 2000 | 2,200 | | | | | |
| 2001 | 2,200 | | | | | |
| Grain | | | | | | |
| 1997 | | 2,180 | 117 | 255,060 | 2.40 | 612,144 |
| 1998 | | 2,050 | 111 | 227,550 | 1.90 | 432,345 |
| 1999 | | 1,950 | 130 | 253,500 | 1.78 | 451,230 |
| 2000 | | 1,950 | 124 | 241,800 | 1.90 | 459,420 |
| 2001 | | 1,900 | 105 | 199,500 | 1.90 | 379,050 |
| Silage | <i>1,000 acres</i> | <i>1,000 acres</i> | <i>Tons</i> | <i>1,000 tons</i> | | |
| 1997 | | 300 | 14.5 | 4,350 | | |
| 1998 | | 240 | 12.5 | 3,000 | | |
| 1999 | | 235 | 17.5 | 4,113 | | |
| 2000 | | 230 | 14.0 | 3,220 | | |
| 2001 | | 280 | 13.0 | 3,640 | | |

¹ Marketing year average.

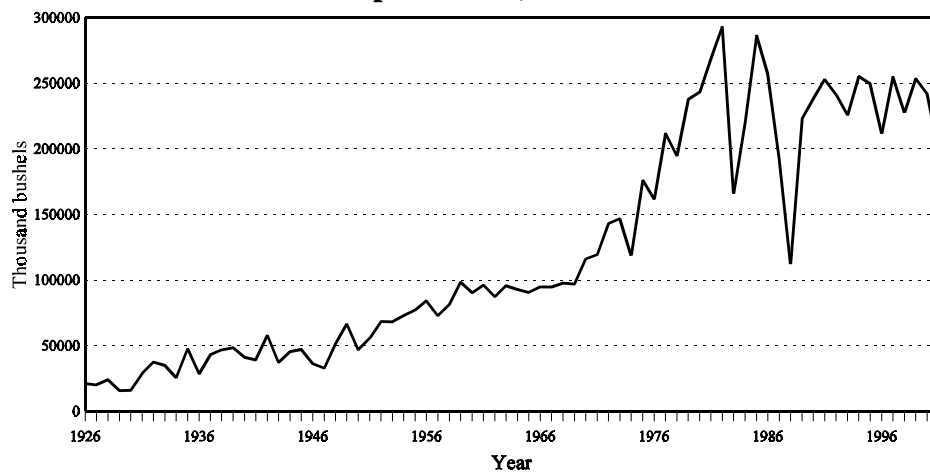
Corn for grain acres, 1926-2001



Corn yield, 1926-2001



Corn production, 1926-2001



Corn for grain: Stocks by quarter, 1997-2001

| Crop year | December 1 | | March 1 | | June 1 | | September 1 | |
|-----------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| | On farm | Off farm | On farm | Off farm | On farm | Off farm | On farm | Off farm |
| | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> |
| 1997 | 150,000 | 55,615 | 80,000 | 53,870 | 46,000 | 30,017 | 22,000 | 15,223 |
| 1998 | 150,000 | 59,500 | 90,000 | 44,200 | 58,000 | 21,000 | 22,000 | 13,650 |
| 1999 | 135,000 | 68,300 | 95,000 | 49,700 | 53,000 | 30,500 | 26,000 | 15,000 |
| 2000 | 145,000 | 58,200 | 90,000 | 46,800 | 55,000 | 24,800 | 21,000 | 11,900 |
| 2001 | 120,000 | 55,400 | 80,000 | 46,700 | 54,000 | 26,750 | | |

Corn: Percentage of acreage planted, 1997-2001

| Year | Month and day | | | | | |
|----------------|---------------|------|------|------|------|------|
| | April | | May | | | June |
| | 20 | 30 | 10 | 20 | 30 | 10 |
| 1997 | 0 | 15 | 48 | 67 | 88 | 98 |
| 1998 | 0 | 20 | 50 | 88 | 96 | 100 |
| 1999 | 0 | 5 | 46 | 80 | 94 | 99 |
| 2000 | 0 | 3 | 39 | 69 | 84 | 92 |
| 2001 | 0 | 14 | 62 | 81 | 93 | 100 |
| 5-year-average | 0.0 | 11.4 | 49.0 | 77.0 | 91.0 | 97.8 |

Corn: Percentage of acreage silked, 1997-2001

| Year | Month and day | | | | | |
|----------------|---------------|-----|------|------|--------|------|
| | July | | | | August | |
| | 1 | 10 | 20 | 30 | 10 | 20 |
| 1997 | 0 | 0 | 3 | 33 | 83 | 99 |
| 1998 | 0 | 11 | 40 | 79 | 95 | 100 |
| 1999 | 0 | 10 | 46 | 88 | 100 | 100 |
| 2000 | 0 | 1 | 15 | 53 | 81 | 94 |
| 2001 | 0 | 2 | 22 | 66 | 91 | 100 |
| 5-year-average | 0.0 | 4.8 | 25.2 | 63.8 | 90.0 | 98.6 |

Corn: Percentage of acreage dent stage, 1997-2001

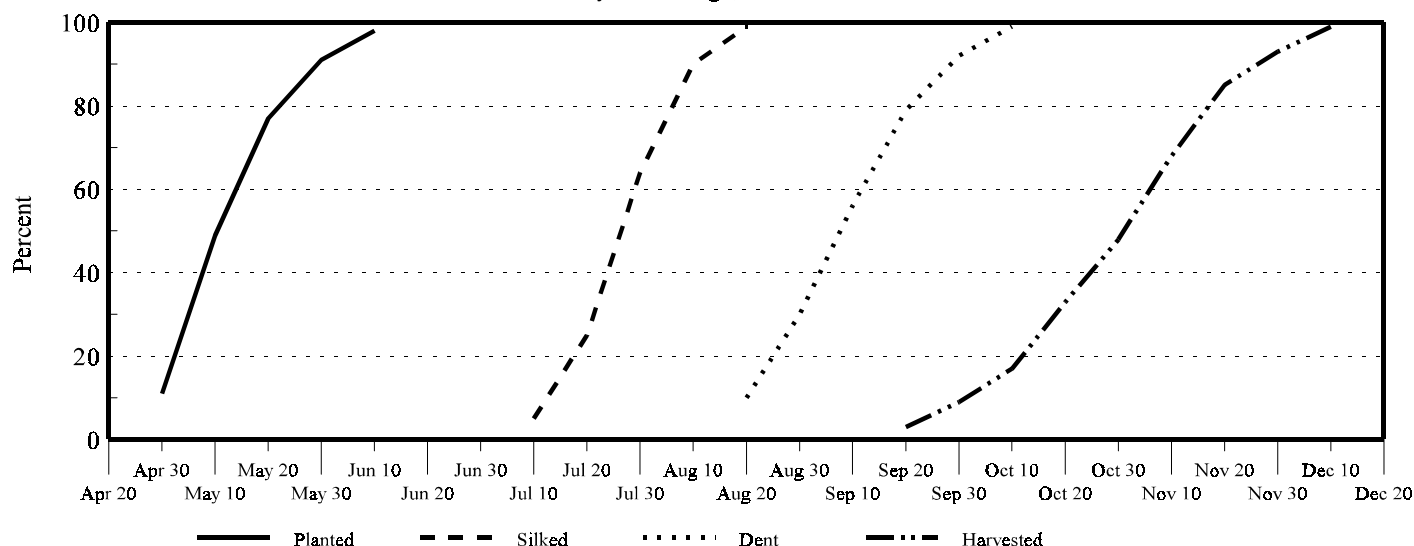
| Year | Month and day | | | | | | |
|----------------|---------------|-----|------|-----------|------|------|---------|
| | August | | | September | | | October |
| | 10 | 20 | 30 | 10 | 20 | 30 | 10 |
| 1997 | 0 | 0 | 4 | 20 | 55 | 80 | 97 |
| 1998 | 0 | 19 | 60 | 90 | 94 | 100 | 100 |
| 1999 | 0 | 17 | 50 | 85 | 97 | 100 | 100 |
| 2000 | 0 | 3 | 10 | 33 | 73 | 86 | 98 |
| 2001 | 0 | 10 | 25 | 52 | 76 | 93 | 98 |
| 5-year-average | 0.0 | 9.8 | 29.8 | 56.0 | 79.0 | 91.8 | 98.6 |

Corn: Percentage of acreage harvested for grain, 1997-2001

| Year | Month and day | | | | | | | | | |
|----------------|---------------|-----|-----|---------|------|------|----------|------|------|----------|
| | September | | | October | | | November | | | December |
| | 10 | 20 | 30 | 10 | 20 | 30 | 10 | 20 | 30 | 10 |
| 1997 | 0 | 0 | 1 | 4 | 7 | 11 | 31 | 62 | 80 | 97 |
| 1998 | 0 | 5 | 19 | 32 | 55 | 71 | 87 | 98 | 100 | 100 |
| 1999 | 2 | 7 | 13 | 28 | 50 | 76 | 89 | 96 | 99 | 100 |
| 2000 | 0 | 0 | 3 | 8 | 24 | 40 | 70 | 81 | 94 | 100 |
| 2001 | 0 | 3 | 7 | 14 | 27 | 41 | 62 | 87 | 94 | 100 |
| 5-year-average | 0.4 | 3.0 | 8.6 | 17.2 | 32.6 | 47.8 | 67.8 | 84.8 | 93.4 | 99.4 |

Corn progress

Five-year-average, 1997-2001



Dry Edible Beans

Michigan's 2001 dry bean production was decimated by drought conditions with little rain from mid-June through mid-August. Rain finally came in late August after most of the crop could benefit and damaged the quality of the already short crop. Many fields had re-growth, which was still developing when hit by frost on October 7 and 8. This is the lowest yield since 1936 and the lowest production on record, dating back to 1909.

Michigan's 2001 total dry bean production was 780,000 hundredweight (cwt) which represents 4 percent of US production.

Michigan ranked seventh in dry bean production for 2001, compared to second last year. The number one dry bean producer in the nation was North Dakota with 6,200,000 cwt.

Michigan continues to lead the country in Cranberry and Black bean production. Michigan dry beans are consumed throughout the world and are largely shipped to the United Kingdom, Japan, France, Mexico, and Italy.

Dry edible beans: Acres, yield, production, and value, 1997-2001

| Year | Planted | Harvested | Yield | Production | Price ¹ | Value of production |
|------|--------------------|--------------------|------------|------------------|--------------------|----------------------|
| | <i>1,000 acres</i> | <i>1,000 acres</i> | <i>Cwt</i> | <i>1,000 cwt</i> | <i>Dol/cwt</i> | <i>1,000 dollars</i> |
| 1997 | 315 | 305 | 1,620 | 4,941 | 18.90 | 93,385 |
| 1998 | 300 | 295 | 1,500 | 4,425 | 21.60 | 95,580 |
| 1999 | 350 | 350 | 2,100 | 7,350 | 16.80 | 123,480 |
| 2000 | 285 | 275 | 1,500 | 4,125 | 13.70 | 56,500 |
| 2001 | 215 | 130 | 600 | 780 | 24.30 | 19,000 |

¹ Marketing year average.

Dry edible beans: Stocks in commercial elevators, 1997-2001

| Month and Year | Navy | All other | Total |
|-------------------|------------------|------------------|------------------|
| | <i>1,000 cwt</i> | <i>1,000 cwt</i> | <i>1,000 cwt</i> |
| December 31 | | | |
| 1997 | 2,850 | 1,700 | 4,550 |
| 1998 | 1,400 | 2,100 | 3,500 |
| 1999 | 2,900 | 2,900 | 5,800 |
| 2000 | 2,800 | 2,500 | 5,300 |
| August 31 | | | |
| 1997 | 1,530 | 240 | 1,770 |
| 1998 | 1,050 | 180 | 1,230 |
| 1999 | 210 | 720 | 930 |
| 2000 | 1,850 | 1,750 | 3,600 |
| 2001 ¹ | 1,500 | 800 | 2,300 |

¹ Final dry bean stocks report. The Michigan Bean Commission and the Michigan Bean Shippers Association requested discontinuation of this report. The Michigan Department of Agriculture concluded that the report should be discontinued. The report had been issued twice a year since 1983.

Dry edible beans: Acres, yield, and production, by class, 1997-2001

| Class and Year | Planted | Harvested | Yield | Production |
|-------------------|--------------|--------------|---------------|------------------|
| | <i>Acres</i> | <i>Acres</i> | <i>Pounds</i> | <i>1,000 cwt</i> |
| Black | | | | |
| 1997 | 80,000 | 78,000 | 1,790 | 1,400 |
| 1998 | 135,000 | 134,000 | 1,570 | 2,100 |
| 1999 | 108,000 | 108,000 | 2,090 | 2,260 |
| 2000 | 55,000 | 53,000 | 1,580 | 840 |
| 2001 | 63,000 | 52,000 | 640 | 335 |
| Cranberry | | | | |
| 1997 | 32,000 | 31,000 | 1,680 | 520 |
| 1998 | 27,000 | 26,000 | 1,100 | 285 |
| 1999 | 31,000 | 31,000 | 1,600 | 496 |
| 2000 | 26,000 | 25,000 | 1,520 | 380 |
| 2001 | 26,000 | 12,000 | 580 | 70 |
| Great Northern | | | | |
| 2001 | 8,000 | 3,500 | 570 | 20 |
| Navy | | | | |
| 1997 | 150,000 | 145,000 | 1,580 | 2,290 |
| 1998 | 75,000 | 74,000 | 1,600 | 1,180 |
| 1999 | 150,000 | 150,000 | 2,300 | 3,450 |
| 2000 | 125,000 | 120,000 | 1,500 | 1,800 |
| 2001 | 65,000 | 30,000 | 570 | 170 |
| Pinto | | | | |
| 1997 | 10,000 | 10,000 | 1,400 | 140 |
| 1998 | 21,000 | 20,000 | 1,470 | 293 |
| 1999 | 9,000 | 9,000 | 1,890 | 170 |
| 2000 | 21,000 | 20,000 | 1,450 | 290 |
| 2001 | 7,000 | 4,500 | 510 | 23 |
| Red kidney, dark | | | | |
| 1997 | 12,000 | 11,500 | 1,040 | 120 |
| 1998 | 9,000 | 9,000 | 1,000 | 90 |
| 1999 | 9,000 | 9,000 | 1,700 | 153 |
| 2000 | 12,000 | 12,000 | 1,520 | 182 |
| 2001 | 9,000 | 7,000 | 430 | 30 |
| Red kidney, light | | | | |
| 1997 | 14,000 | 14,000 | 1,640 | 230 |
| 1998 | 14,000 | 13,000 | 1,310 | 170 |
| 1999 | 17,000 | 17,000 | 1,800 | 306 |
| 2000 | 19,000 | 19,000 | 1,500 | 285 |
| 2001 | 18,000 | 11,000 | 770 | 85 |
| Small, red | | | | |
| 1997 | 10,000 | 9,000 | 1,670 | 150 |
| 1998 | 11,000 | 11,000 | 1,820 | 200 |
| 1999 | 15,000 | 15,000 | 2,070 | 310 |
| 2000 | 8,000 | 8,000 | 1,410 | 113 |
| 2001 | 12,000 | 6,500 | 420 | 27 |
| Other | | | | |
| 1997 | 7,000 | 6,500 | 1,400 | 91 |
| 1998 | 8,000 | 8,000 | 1,340 | 107 |
| 1999 | 11,000 | 11,000 | 1,860 | 205 |
| 2000 | 19,000 | 18,000 | 1,310 | 235 |
| 2001 | 7,000 | 3,500 | 570 | 20 |

Hay and Haylage

Michigan hay production was estimated at 3.8 million tons, down 12 percent from 2000. Alfalfa and alfalfa mixtures accounted for 85 percent of all dry hay produced. All hay harvested acres fell to 1.15 million, down from 1.3 million the previous year. The average all hay yield was 3.3 tons per acre, down 0.03 tons from 2000. Early season growing conditions were excellent for alfalfa. During the first cutting of alfalfa, 1 most growers reported average

to poor quality with big yields. Quality of the second cutting was excellent but abnormally dry summer conditions reduced growth. Alfalfa and alfalfa mixtures accounted for 900,000 acres of the total with a yield of 3.6 tons per acre. Other hay accounted for 250,000 acres with a yield of 2.2 tons per acre. Value of the hay crop was \$264.3 million, down 3 percent from 2000.

Hay, haylage, and greenchop: Acres, yield, production, and value, 1997-2001

| Year | Planted | Harvested | Yield | Production | Price ¹ | Value of production |
|-------------------------------|--------------------|--------------------|-------------|-------------------|--------------------|----------------------|
| | <i>1,000 acres</i> | <i>1,000 acres</i> | <i>Tons</i> | <i>1,000 tons</i> | <i>Dollars</i> | <i>1,000 dollars</i> |
| All dry hay | | | | | | |
| 1997 | | 1,250 | 3.01 | 3,760 | 86.00 | 378,530 |
| 1998 | | 1,250 | 2.85 | 3,565 | 89.00 | 306,410 |
| 1999 | | 1,300 | 3.40 | 4,415 | 69.00 | 305,805 |
| 2000 | | 1,300 | 3.33 | 4,330 | 62.50 | 272,040 |
| 2001 | | 1,150 | 3.30 | 3,790 | 69.50 | 264,325 |
| Alfalfa hay | | | | | | |
| 1997 | | 900 | 3.40 | 3,060 | 103.00 | 315,180 |
| 1998 | | 850 | 3.30 | 2,805 | 90.00 | 252,450 |
| 1999 | | 950 | 3.80 | 3,610 | 72.00 | 259,920 |
| 2000 | | 1,000 | 3.70 | 3,700 | 64.50 | 238,650 |
| 2001 | | 900 | 3.60 | 3,240 | 72.50 | 234,900 |
| Alfalfa seedings | | | | | | |
| 1997 | 160 | | | | | |
| 1998 | 95 | | | | | |
| 1999 | 100 | | | | | |
| 2000 | 140 | | | | | |
| 2001 | 100 | | | | | |
| Other hay | | | | | | |
| 1997 | | 350 | 2.00 | 700 | 90.50 | 63,350 |
| 1998 | | 400 | 1.90 | 760 | 71.00 | 53,960 |
| 1999 | | 350 | 2.30 | 805 | 57.00 | 45,885 |
| 2000 | | 300 | 2.10 | 630 | 53.00 | 33,390 |
| 2001 | | 250 | 2.20 | 550 | 53.50 | 29,425 |
| All haylage and greenchop | | | | | | |
| 2000 | | 310 | 5.76 | 1,785 | | |
| 2001 | | 340 | 5.82 | 1,980 | | |
| Alfalfa haylage and greenchop | | | | | | |
| 2000 | | 280 | 6.00 | 1,680 | | |
| 2001 | | 320 | 6.00 | 1,920 | | |

¹ Marketing year average.

Hay: Stocks on farms, 1998-2002

| Year | May 1 | December 1 |
|------|-------------------|-------------------|
| | <i>1,000 tons</i> | <i>1,000 tons</i> |
| 1998 | 414 | 2,093 |
| 1999 | 566 | 2,110 |
| 2000 | 1,170 | 3,460 |
| 2001 | 1,000 | 3,450 |
| 2002 | 811 | |

Maple Syrup

Michigan maple syrup production was estimated at 66,000 gallons for the 2002 season, 6,000 gallons above the 2001 output. This season was moderate for the production of quality syrup. Sugar content of the sap was lower and the syrup was darker in color than last year.

Michigan ranked seventh in maple syrup production in 2002, the same as the last two years, and produced about 6 percent of the total U.S. production. The tapping season started this year on

March 2nd and ended April 3rd for most producers. Total taps were 320,000 and the syrup yield in gallons was 0.206 per tap. In 2001, Michigan producers sold 68 percent of their syrup retail, 19 percent wholesale, and 13 percent bulk. The average price per gallon for 2001 was \$31.40 compared with \$35.10 in 2000. The value of production for 2001 was \$1.9 million, up 22 percent from 2000. Publication of current year preliminary price and value was discontinued due to requests from the syrup industry.

Maple syrup: Taps, yield, production, price, and value, 1998-2002

| Year | Taps | Yield per tap | Production | Price per gallon | Value of production |
|------|--------------|----------------|----------------------|------------------|----------------------|
| | <i>1,000</i> | <i>Gallons</i> | <i>1,000 gallons</i> | <i>Dollars</i> | <i>1,000 dollars</i> |
| 1998 | | | 55 | 32.00 | 1,760 |
| 1999 | | | 73 | 28.20 | 2,058 |
| 2000 | | | 44 | 35.10 | 1,544 |
| 2001 | 332 | 0.181 | 60 | 31.40 | 1,884 |
| 2002 | 320 | 0.206 | 66 | (¹) | (¹) |

¹ Published in June 2003.

Mint

Mint: Acres, yield, production, and value, 1997-2001

| Year | Harvested | Yield | Production | Price per pound ¹ | Value of production |
|------------|--------------------|---------------|---------------------|------------------------------|----------------------|
| | <i>1,000 acres</i> | <i>Pounds</i> | <i>1,000 Pounds</i> | <i>Dollars</i> | <i>1,000 dollars</i> |
| Peppermint | | | | | |
| 2000 | 1.0 | 50 | 50 | 9.20 | 450 |
| 2001 | 1.0 | 50 | 50 | 9.90 | 500 |
| Spearmint | | | | | |
| 1997 | 1.5 | 34 | 51 | 11.00 | 561 |
| 1998 | 1.7 | 42 | 71 | 11.20 | 795 |
| 1999 | 1.7 | 40 | 68 | 10.00 | 680 |
| 2000 | 1.7 | 45 | 77 | 9.20 | 708 |
| 2001 | 1.7 | 50 | 85 | 9.80 | 800 |

¹ Marketing year average.

Oats

Oat acreage decreased in Michigan during 2001. Growers planted 70,000 acres of oats in 2001 compared with 95,000 the year before. Harvested acres, at 55,000, were down 20,000 from last year. The 2001 oat production was 3.52 million bushels, down 27 percent from the previous year. Yields remained the same as 2000, at 64 bushels per acre. Michigan oat harvest was completed

one week ahead of the five-year average date. Oat condition was 53 percent good to excellent in mid August when growers were well into harvest. Hot, dry weather in August was favorable for harvest, with some lodging in fields. Sanilac county ranked first in oat production for 2001, while Tuscola, Lapeer, Shiawassee, and Montcalm round out the top five counties.

Oats: Acres, yield, production, and value, 1997-2001

| Year | Planted | Harvested | Yield | Production | Price ¹ | Value of production |
|------|--------------------|--------------------|----------------|----------------------|--------------------|----------------------|
| | <i>1,000 acres</i> | <i>1,000 acres</i> | <i>Bushels</i> | <i>1,000 bushels</i> | <i>Dollars</i> | <i>1,000 dollars</i> |
| 1997 | 95 | 80 | 61 | 4,880 | 1.86 | 9,077 |
| 1998 | 110 | 100 | 48 | 4,800 | 1.42 | 6,816 |
| 1999 | 100 | 75 | 65 | 4,875 | 1.35 | 6,581 |
| 2000 | 95 | 75 | 64 | 4,800 | 1.30 | 6,200 |
| 2001 | 70 | 55 | 64 | 3,520 | 1.55 | 5,500 |

¹ Marketing year average.

Potatoes

Michigan's 2001 potato production was 13.95 million hundredweight (cwt) down 7 percent from a year ago. Planted acres were 46,000 and harvested acres were 45,000. The state's average yield was 310 cwt per acre, down from the record tying 315 cwt per acre in 2000. The spring of 2001 was wet and planting was delayed in many areas. Drought-like conditions followed and then continued throughout the summer, causing most non-irrigated fields to suffer moisture stress.

Michigan ranked ninth among states in potato production in 2001. Most Michigan potatoes are whites, which comprise approximately 80 percent of planted acreage, followed by russets and reds which comprise approximately 16 and 4 percent of planted acreage, respectively. Whites are sold for table use or processed for potato chips while russets are used for french fries and other frozen products.

Fall potatoes: Acres, yield, production, and value, 1997-2001

| Year | Planted | Harvested | Yield | Production | Price ¹ | Value of production |
|------|--------------------|--------------------|------------|------------------|--------------------|----------------------|
| | <i>1,000 acres</i> | <i>1,000 acres</i> | <i>Cwt</i> | <i>1,000 cwt</i> | <i>Dollars</i> | <i>1,000 dollars</i> |
| 1997 | 48.0 | 47.5 | 300 | 14,250 | 6.45 | 91,913 |
| 1998 | 47.0 | 46.5 | 315 | 14,648 | 6.70 | 98,142 |
| 1999 | 48.0 | 47.5 | 315 | 14,963 | 6.80 | 101,748 |
| 2000 | 49.0 | 47.5 | 315 | 14,963 | 6.70 | 100,300 |
| 2001 | 46.0 | 45.0 | 310 | 13,950 | 7.65 | 106,718 |

¹ Marketing year average.

Fall potatoes: Stocks by type as percent of total stocks, December 1, 1997-2001

| Type | 1997 | 1998 | 1999 | 2000 | 2001 |
|--------|----------------|----------------|----------------|----------------|----------------|
| | <i>Percent</i> | <i>Percent</i> | <i>Percent</i> | <i>Percent</i> | <i>Percent</i> |
| White | 72 | 81 | 87 | 86 | 90 |
| Russet | 27 | 18 | 11 | 12 | 8 |
| Red | 1 | 1 | 2 | 2 | 2 |

Fall potatoes: Production and disposition, 1997-2001

| Crop year | Production | Total used for seed | Farm Disposition | | Sold |
|-----------|------------------|---------------------|--------------------------|--------------------|------------------|
| | | | Seed, feed, and home use | Shrinkage and loss | |
| | <i>1,000 cwt</i> | <i>1,000 cwt</i> | <i>1,000 cwt</i> | <i>1,000 cwt</i> | <i>1,000 cwt</i> |
| 1997 | 14,250 | 864 | 200 | 1,300 | 12,750 |
| 1998 | 14,648 | 888 | 200 | 1,348 | 13,100 |
| 1999 | 14,963 | 1,005 | 213 | 1,300 | 13,450 |
| 2000 | 14,963 | 1,135 | 250 | 1,700 | 13,013 |
| 2001 | 13,950 | (¹) | (¹) | (¹) | (¹) |

¹ Published in September 2002.

Fall potatoes: Stocks, 1997-2001

| Crop year | December 1 | January 1 | February 1 | March 1 | April 1 | May 1 |
|-----------|------------------|------------------|------------------|------------------|------------------|------------------|
| | <i>1,000 cwt</i> | <i>1,000 cwt</i> | <i>1,000 cwt</i> | <i>1,000 cwt</i> | <i>1,000 cwt</i> | <i>1,000 cwt</i> |
| 1997 | 8,500 | 7,000 | 5,500 | 3,800 | 2,300 | 1,000 |
| 1998 | 9,100 | 7,500 | 5,400 | 4,100 | 2,200 | 800 |
| 1999 | 8,800 | 7,100 | 5,800 | 4,200 | 2,700 | 1,300 |
| 2000 | 8,700 | 6,900 | 5,200 | 3,400 | 1,500 | 700 |
| 2001 | 8,200 | 6,200 | 4,800 | 3,200 | 1,500 | 400 |

Soybeans

Michigan soybean production totaled 63.9 million bushels, down 13 percent from 2000. The yield was 30 bushels per acre in 2001. Planted and harvested acres were up from the 2000 total to 2.15 million and 2.13 million, respectively. By June 1, farmers had 77 percent of the soybean acres planted. Planting conditions were excellent for soybeans. Drought conditions during the growing

season stressed the crop. Soybean aphids, cyst nematodes, and spider mites were present in fields. Wet conditions slowed harvest of Michigan's soybean crop. Ninety-five percent of soybeans were harvested by November 19, just 2 percent behind the normal pace. Lenawee, Sanilac, Branch, Gratiot, and Shiawassee were the top counties in soybean production.

Soybeans: Acres, yield, production, and value, 1997-2001

| Year | Planted | Harvested | Yield | Production | Price ¹ | Value of production |
|------|--------------------|--------------------|----------------|----------------------|--------------------|----------------------|
| | <i>1,000 acres</i> | <i>1,000 acres</i> | <i>Bushels</i> | <i>1,000 bushels</i> | <i>Dollars</i> | <i>1,000 dollars</i> |
| 1997 | 1,870 | 1,860 | 38.5 | 71,610 | 6.47 | 463,317 |
| 1998 | 1,900 | 1,890 | 39.0 | 73,710 | 4.99 | 367,813 |
| 1999 | 1,950 | 1,940 | 40.0 | 77,600 | 4.61 | 357,736 |
| 2000 | 2,050 | 2,030 | 36.0 | 73,080 | 4.54 | 331,800 |
| 2001 | 2,150 | 2,130 | 30.0 | 63,900 | 4.20 | 268,400 |

¹ Marketing year average.

Soybeans: Stocks by quarter, 1997-2001

| Crop year | December 1 | | March 1 | | June 1 | | September 1 | |
|-----------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| | On farm | Off farm | On farm | Off farm | On farm | Off farm | On farm | Off farm |
| | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> |
| 1997 | 19,000 | 20,931 | 12,000 | 10,646 | 4,000 | 4,677 | 1,500 | 1,262 |
| 1998 | 30,000 | 18,000 | 22,000 | 9,950 | 11,000 | 5,600 | 4,000 | 2,150 |
| 1999 | 33,000 | 20,200 | 17,000 | 12,750 | 6,000 | 6,250 | 4,100 | 1,500 |
| 2000 | 30,000 | 19,800 | 18,000 | 9,600 | 8,500 | 3,225 | 2,400 | 1,400 |
| 2001 | 30,000 | 20,500 | 18,000 | 11,750 | 7,700 | 5,050 | | |

Soybeans: Percentage of acreage planted, 1997-2001

| Year | Month and day | | | | | | |
|----------------|---------------|------|------|------|------|------|-------|
| | May | | | June | | | July |
| | 10 | 20 | 30 | 10 | 20 | 30 | 10 |
| 1997 | 5 | 19 | 60 | 84 | 100 | 100 | 100 |
| 1998 | 10 | 56 | 81 | 92 | 98 | 100 | 100 |
| 1999 | 12 | 49 | 81 | 93 | 99 | 100 | 100 |
| 2000 | 12 | 29 | 42 | 63 | 82 | 94 | 100 |
| 2001 | 31 | 58 | 75 | 80 | 91 | 96 | 100 |
| 5-year-average | 14.0 | 42.2 | 67.8 | 82.4 | 94.0 | 98.0 | 100.0 |

Soybeans: Percentage of acreage setting pods, 1997-2001

| Year | Month and day | | | | | |
|----------------|---------------|------|------|--------|------|------|
| | July | | | August | | |
| | 10 | 20 | 30 | 10 | 20 | 30 |
| 1997 | 0 | 0 | 20 | 53 | 93 | 100 |
| 1998 | 0 | 17 | 57 | 73 | 96 | 100 |
| 1999 | 0 | 20 | 48 | 77 | 93 | 100 |
| 2000 | 0 | 4 | 20 | 42 | 74 | 86 |
| 2001 | 0 | 15 | 46 | 70 | 84 | 94 |
| 5-year-average | 0.0 | 11.2 | 38.2 | 63.0 | 88.0 | 96.0 |

Soybeans: Percentage of acreage shedding leaves, 1997-2001

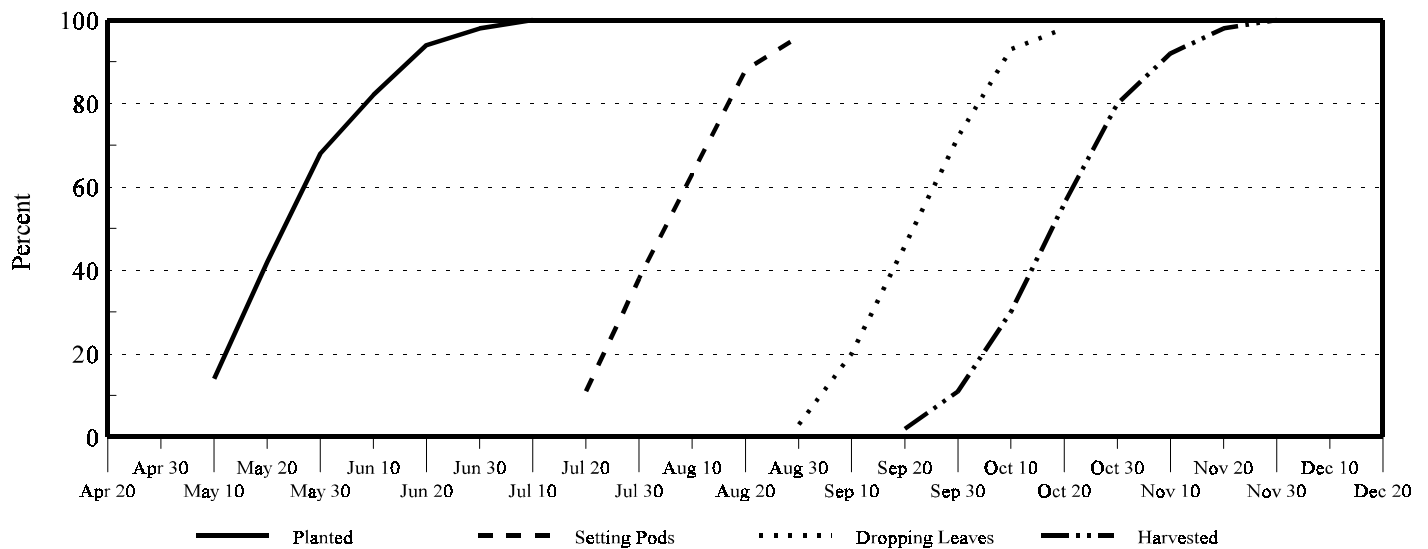
| Year | Month and day | | | | | | |
|----------------|---------------|-----|-----------|------|------|---------|------|
| | August | | September | | | October | |
| | 20 | 30 | 10 | 20 | 30 | 10 | 20 |
| 1997 | 0 | 0 | 7 | 24 | 57 | 98 | 100 |
| 1998 | 0 | 9 | 40 | 68 | 87 | 100 | 100 |
| 1999 | 0 | 2 | 31 | 66 | 98 | 100 | 100 |
| 2000 | 0 | 0 | 3 | 26 | 54 | 78 | 93 |
| 2001 | 0 | 4 | 18 | 47 | 64 | 87 | 99 |
| 5-year-average | 0.0 | 3.0 | 19.8 | 46.2 | 72.0 | 92.6 | 98.4 |

Soybeans: Percentage of acreage harvested, 1997-2001

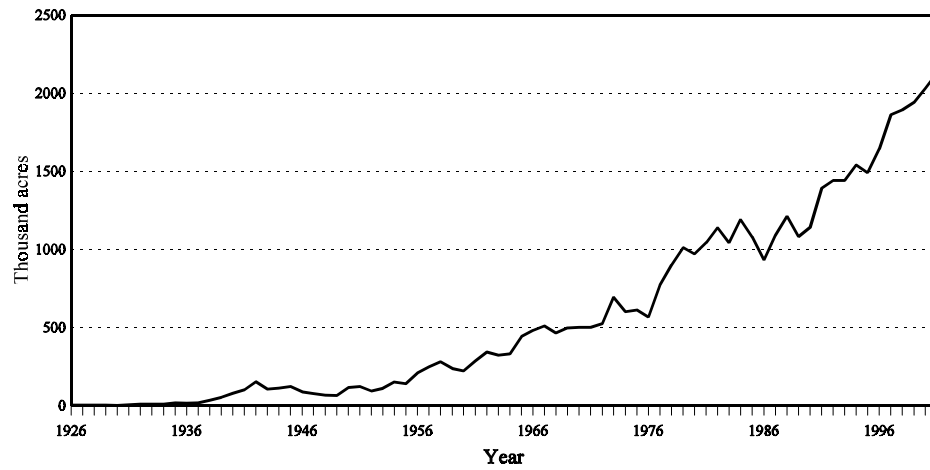
| Year | Month and day | | | | | | | | |
|----------------|---------------|-----|------|---------|------|------|----------|------|------|
| | September | | | October | | | November | | |
| | 10 | 20 | 30 | 10 | 20 | 30 | 10 | 20 | 30 |
| 1997 | 0 | 0 | 4 | 25 | 64 | 81 | 90 | 95 | 98 |
| 1998 | 0 | 3 | 22 | 44 | 66 | 93 | 99 | 100 | 100 |
| 1999 | 0 | 5 | 22 | 46 | 67 | 92 | 98 | 100 | 100 |
| 2000 | 0 | 0 | 3 | 15 | 48 | 76 | 92 | 100 | 100 |
| 2001 | 0 | 1 | 6 | 18 | 36 | 57 | 79 | 96 | 100 |
| 5-year-average | 0.0 | 1.8 | 11.4 | 29.6 | 56.2 | 79.8 | 91.6 | 98.2 | 99.6 |

Soybean progress

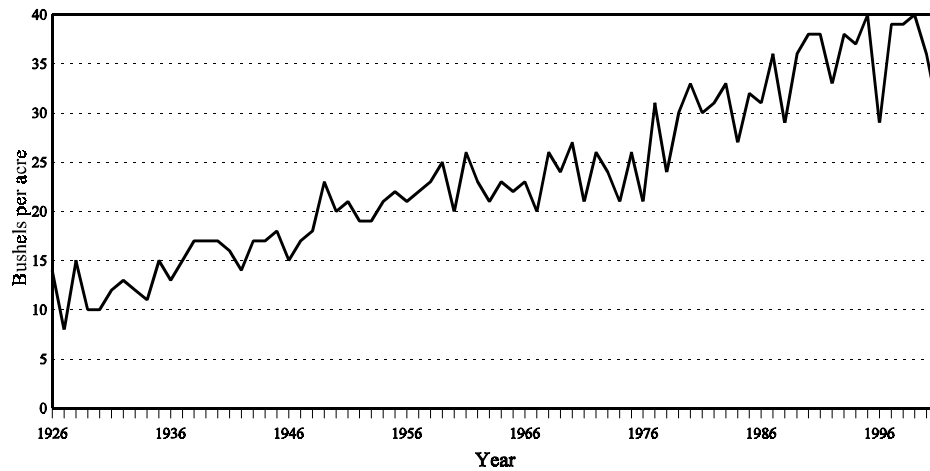
Five-year-average, 1997-2001



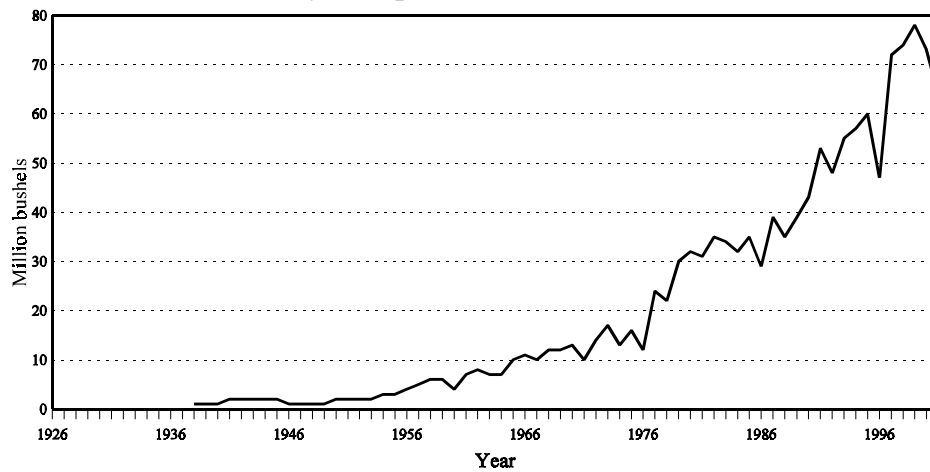
Soybean harvested acres, 1926-2001



Soybean yield, 1926-2001



Soybean production, 1926-2001



Sugarbeets

Acres planted to sugarbeets dropped for the second year in a row in Michigan and decreased 5 percent in 2001 to 180,000 acres planted. Harvested acreage, at 166,000, remained the same as the previous year. Acres idled were attributed primarily to the PIK program. All of the crop was planted by the middle of May. Growing conditions for sugarbeets saw variable weather. Early season rain and cooler weather caused substantial insect feeding from spinach leafminers. Drought conditions later in the growing

season held sugarbeet growth at a standstill and some fields had damage from *Cercospora* Leafspots. Heavy rainfall in late August and September benefitted the crop. Sugarbeet harvest was completed ahead of last year, but muddy conditions slowed harvest some. Yields averaged 19.4 tons per acre compared with 20.5 tons per acre in 2000. The total tonnage decreased 5 percent from 2000. Huron and Tuscola were the top sugarbeet producing counties for 2001.

Sugarbeets: Acres, yield, production, and value, 1997-2001

| Year | Planted | Harvested | Yield | Production | Price ¹ | Value of production |
|------|--------------------|--------------------|-------------|-------------------|--------------------|----------------------|
| | <i>1,000 acres</i> | <i>1,000 acres</i> | <i>Tons</i> | <i>1,000 tons</i> | <i>Dollars</i> | <i>1,000 dollars</i> |
| 1997 | 163 | 160 | 19.0 | 3,040 | 38.50 | 117,040 |
| 1998 | 177 | 173 | 16.0 | 2,768 | 36.70 | 101,586 |
| 1999 | 194 | 190 | 18.6 | 3,534 | 32.80 | 115,915 |
| 2000 | 189 | 166 | 20.5 | 3,403 | 31.30 | 106,500 |
| 2001 | 180 | 166 | 19.4 | 3,220 | (²) | (²) |

¹ Marketing year average.

² Published in February 2003.

Wheat

Michigan's 2001 winter wheat crop totaled 35.8 million bushels, virtually unchanged from 2000. Planted acres were up 40,000 from the previous year to 570,000. Harvested acreage rose 60,000 from 2000 to 560,000. The average yield was 64 bushels per acre. The value of the crop rose 16 percent to \$88 million. Sanilac, Huron, Lenawee, Saginaw, and Monroe were the top five counties in wheat production.

Planting began on schedule the second week of September. Wet weather put seeding behind schedule the second half of that month. Drier conditions prevailed in October, and planting was done by Halloween, the normal time. Emergence was slowed in October by cool temperatures, but the crop was out of the ground by December 1, on schedule. Over two-thirds of acres were rated good to excellent by the end of November. Temperatures were below

normal in December. The crop, however, was sheltered by a record high snowfall for the month. There was little snow cover for winter wheat in Michigan the second half of winter. There was, however, very little extremely cold weather after December.

Adequate soil moisture and warm late April temperatures gave the Michigan winter wheat crop a quick start in the spring. May was exceedingly wet. Despite below normal temperatures late spring, the crop headed out ahead of schedule. Michigan wheat growers had excellent weather for combining, which began in earnest July 10. Early yields were good. Yields on field harvested later in July were excellent. Over 95 percent of crop was out of the fields by August 1.

Winter wheat: Acres, yield, production, and value, 1997-2001

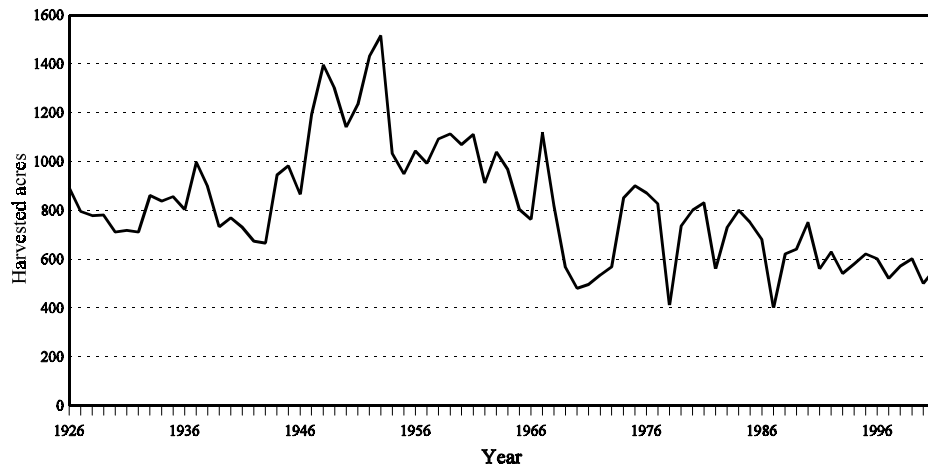
| Year | Planted | Harvested | Yield | Production | Price ¹ | Value of production |
|------|--------------------|--------------------|----------------|----------------------|--------------------|----------------------|
| | <i>1,000 acres</i> | <i>1,000 acres</i> | <i>Bushels</i> | <i>1,000 bushels</i> | <i>Dollars</i> | <i>1,000 dollars</i> |
| 1997 | 530 | 520 | 62 | 32,240 | 3.26 | 105,102 |
| 1998 | 600 | 570 | 54 | 30,780 | 2.33 | 71,717 |
| 1999 | 610 | 600 | 69 | 41,400 | 2.12 | 87,768 |
| 2000 | 530 | 500 | 72 | 36,000 | 2.11 | 76,000 |
| 2001 | 570 | 560 | 64 | 35,840 | 2.45 | 87,800 |

¹ Marketing year average.

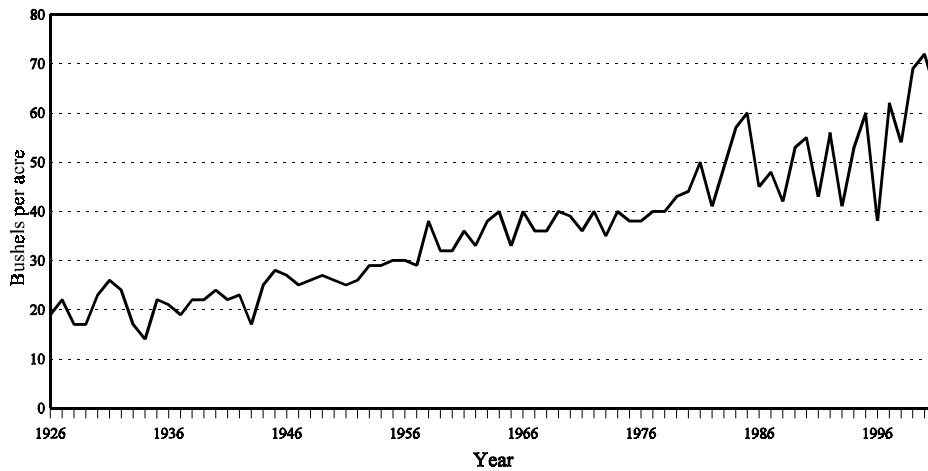
Wheat: Stocks by quarter, 1997-2001

| Crop year | September 1 | | December 1 | | March 1 | | June 1 | |
|-----------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| | On farm | Off farm | On farm | Off farm | On farm | Off farm | On farm | Off farm |
| | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> | <i>1,000 bushels</i> |
| 1997 | 2,700 | 18,750 | 1,900 | 16,005 | 1,200 | 11,035 | 500 | 6,223 |
| 1998 | 6,500 | 25,200 | 4,500 | 21,000 | 3,000 | 17,500 | 1,100 | 12,000 |
| 1999 | 5,000 | 31,050 | 3,000 | 25,050 | 2,800 | 19,450 | 1,900 | 12,900 |
| 2000 | 7,000 | 28,950 | 4,100 | 22,400 | 3,000 | 17,150 | 800 | 12,380 |
| 2001 | 4,500 | 25,550 | 3,300 | 20,050 | 1,200 | 16,050 | 600 | 10,550 |

Wheat harvested acres, 1926-2001



Wheat yield, 1926-2001



Wheat production, 1926-2001

